APRIL/MAY 2023

DOCH44A — POLYMER AND PLASTICS

Time : Three hours | Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. Differentiate between the natural and synthetic polymers.
2. Define repeating unit.
3. What is polymer? How does it differ from rubber?
4. Distinguish between branched and cross-linked polymers.
5. Distinguish between homopolymer and copolyemer.
6. What are graft polymers?
7. List out the use of polystyrene.
8. Mention the applications of butyl rubber.
9. Mention any two fillers used in polymers.
10. What are dyes?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions

11. (a) Explain the classification of polymers.

Or

(b) Describe the mechanism of coordination polymerisation.

12. (a) Discuss the stereochemistry of polymers.

Or

(b) Discuss the factors influencing glass transition temperature.

13. (a) Write a note on block polymers.

Or

(b) Explain number average and weight average molecular weights of polymers.

14. (a) Why is PTFE is a linear polymer? Mention its advantages.

Or

(b) Describe the preparation and Properties of Polyurethane and Thiocol.

15. (a) Enumerate about plasticizers.

Or

(b) Define Plastics and Resins. How are they used in day to day life.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain in detail about different polymerisation methods.

17. Discuss the Stereochemistry of isotactic, sydiotactic and atactic polymers.

18. Describe the determination of molecular mass of a polymer by the viscosity and Osmometry method.

19. Write short notes on preparation, properties structure and uses of Freons and polystrene.

20. Illustrate the following with their uses.

(a) Thermoplastic resins

(b) Thermosetting resins

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